



NJT ASES UPDATE

Harold Gillen (on behalf of John Vogler)

October 23, 2002

NJT ASES Update



ASES (Advanced Speed Enforcement System)

- **Continuous Cab Signal System (4 and 9 Aspect), Integrated with Transponder-based Intermittent Cab Signal System (SES).**
- **Transponders use standard Euro Balise air gap transmission specs (power, frequency, etc.)**
- **Transponder message consists of 255 bits:**
 - 180 user bits
 - 72 bit CRC
 - 3 Filler bits
- **Common fields of data coordinated to provide Interoperability**

NJT ASES Update



SES Provides position tracking based on transponder location input and tachometer inputs

- Profile speed enforcement
- Economical enforcement of civil speeds

SES primary function

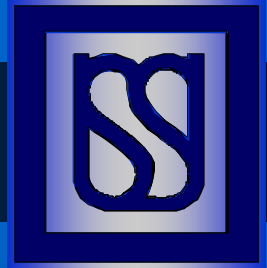
- **Positive Stop**

- Home Signal displaying Stop or Restricted
- First Automatic Signal displaying Stop & Proceed
 - SES requests Train Stop Penalty at subsequent Automatic Signal displaying Stop & Proceed if the Locomotive Engineer fails to stop prior to the signal.

- **Civil Speed Enforcement**

- Permanent (bridges, curves, etc.)
- Temporary (work areas)

NJT ASES Update



SES also provides

Speed Enforcement in

- **Cab Signal Territory**
 - **Active Transponders at Distant and Home Signals expand 4-Aspect Cab Signal Information**
 - **Note: “Active” Transponders interface with Wayside Signal System to transmit current signal information to the train**
- **Non-Cab Signal Territory**
 - **Active Transponders at all Signal locations**
 - **Provides Stand-alone car-borne ATP System**

NJT ASES Update



NJT Project Status

SES in revenue service on Pascack Valley Line

- **13 trains (GP40s and COMET1 Cab Cars)**
- **20 trips a day**
- **23 miles of SES-equipped single track**
 - **No Cab Signals**
 - **Active transponders installed at all Signal locations**

SES providing stand-alone car-borne ATP

- **Signal enforcement**
 - **Positive stop**
- **Line Speed**
- **Civil Speed**

NJT ASES Update



- **SES Installation on**
 - 82 ARROW Married Pairs**
 - 7 ARROW Singles**
- **Being installed on new vehicles:**
 - 30 ALP46s**
 - 33 Diesel Electric Locos**
 - 50 COMET5 Push-Pull Cab Cars**
- **Wayside SES design for Mainline 90% complete**
 - 30 miles (15 miles of double track)**
 - To be placed in revenue service Spring 2003**
- **NJT will complete Cab Signal installation on all lines by end of this year**